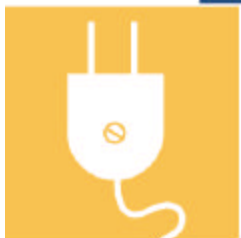




Labs21: Improving the Performance of U.S. Laboratories

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What is the Labs21 Initiative?

- A joint EPA/DOE initiative to improve the environmental performance of U.S. laboratories.
- Focus on improving energy and water efficiency, encouraging renewable energy sources, and promoting environmental stewardship in laboratories.
- Three components:
 - Partnership program
 - Training
 - Tool kit



Why is Labs21 Needed?

- Laboratories are energy intensive.
- Labs can reduce energy use by 50 percent or more.
- Reducing laboratory energy use will reduce carbon dioxide emissions.
- Lower energy use will reduce demands on local and regional resources.
- Energy cost savings possible from U.S. labs may be \$9 billion annually.



The Labs21 Approach

Labs21 is dedicated to the pursuit of sustainable, high-performance, and low-energy laboratories that will:

- Minimize overall environmental impacts.
- Protect occupant safety.
- Optimize whole building efficiency on a life-cycle basis.



Basic Principles of the Labs21 Approach

- Adopt voluntary goals.
- Assess opportunities from a “whole buildings” approach.
- Use life-cycle cost decision-making.
- Incorporate a comprehensive, whole building commissioning process.
- Employ a range of energy and water efficiency strategies.



Basic Principles of the Labs21 Approach (cont'd)

- Measure energy and water consumption and track emission reductions.
- Evaluate on-site power generation, combined heat and power technologies, and renewable power purchases.
- Build with “green” construction materials.
- Promote energy and water efficiency efforts.
- Expand beyond the laboratory building.



Benefits for Participating Laboratories

- Improve performance.
 - Lower operating costs.
 - Improve environmental quality.
 - Free up capacity.
 - Improve maintenance and reliability.
 - Improve health and safety.
- National recognition and an enhanced image.
- Access to technical assistance.
- Opportunities for regulatory relief.



Component #1: Partnership Program

- EPA and DOE will establish partnerships with interested labs.
- Working with the Labs21 Team, each partner will:
 - Set voluntary goals.
 - Assess the opportunities for improvements.
 - Measure and report progress.



Pilot Projects

- Labs21 will work with each partner to define the scope and provide technical assistance.
- Pilot partners will help define the program's future.



Pilot Participation Requirements

- Adopt the Labs21 principles.
- Commit to a specific project (new or retrofit).
- Develop a method to measure and evaluate success.
- Grant Labs21 permission to publicize partnership activities.
- Participate in the annual Labs21 conference.



Potential Labs21 Pilot Partners

Private Sector Partners

- Abbott Laboratories
- Bristol-Myers Squibb
- Carnegie Mellon University
- Duke University
- Raytheon
- University of California - Merced
- Wyeth-Ayerst Pharmaceuticals

Federal Partners

- Lawrence Berkeley National Laboratory
- National Oceanic & Atmospheric Administration
- National Renewable Energy Laboratory
- Sandia National Laboratories



Component #2: Training

- A comprehensive education and training plan will target:
 - Design professionals.
 - Laboratory O&M management.
 - Architecture and engineering students.
- One day workshops in 2001.
- Training curricula and (future) video.



Labs21 High Performance Design Course

One-day course will provide a comprehensive understanding of the opportunities to optimize energy performance of new and existing laboratories.

- Kansas City, Missouri
June 7, 2001
- Alexandria, Virginia
July 23, 2001
- Washington, DC
October 1, 2001



2001 Labs21 Conference



October 2-4, 2001
Hotel Washington
Washington, DC



www.epa.gov/labs21century



Component #3: Tool Kit

An Internet-accessible compendium containing the following tools:

- Guides to energy efficient laboratory design.
- Design intent tool.
- National database with performance metrics for laboratory energy use.
- Case studies.
- Links to other related Web sites.



How Do I Participate?

- Join the Labs21 Network by submitting an e-mail to <labs21@erg.com>.
- Visit the Labs21 Web site at <www.epa.gov/labs21century> for more information as the program evolves.